

Tharwat Ali Sakr, Ph.D., PMP.

Resume

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| PERSONAL | Address: Dept. of Structural Engineering, Zagazig University, Zagazig, Egypt, 44519, Tel. ☎: +20 11 1191 4504 +20 2 2106 1586 +971 52 806 9534 Email, ✉: thsakr@gmail.com sakr@sakr.org Website : Sakr.org Nationality: Egyptian Current Position <input type="checkbox"/> Professor, Structural Engineering, Zagazig University <input type="checkbox"/> Structural Design Consultant, Talaat Mostafa Group (TMG) |  |
| EDUCATION | <ul style="list-style-type: none">▶ B.Sc. Civil Engineering in Construction (Civil), Zagazig University, 1985▶ M. Sc. in Structural Design, Zagazig University, 1991. <i>Thesis "Lateral Analysis of Non Collinear Coupled Shear Walls"</i>▶ Ph. D. in Structural Engineering, Zagazig University 1997, <i>Thesis "Knowledge Based System for Seismic Risk Assessment of Structures"</i> | |
| PROFESSIONAL AFFILIATION | <ul style="list-style-type: none">▶ Member of The Egyptian Engineers Syndicate▶ UAE. Society of Engineers Member▶ Saudi Council of Engineers Member▶ Approved by DUBAI Municipality as structural engineer, Unlimited Height.▶ Accredited by JAFZA (Tarakhees) as Structural Engineer▶ Consultant, Design of R. C. Structures (Egyptian Engineers Syndicate)▶ Member, Project Management Institute (PMI), Certified PMP | |
| TRAINING | <ul style="list-style-type: none">▶ Training course in Programming with basic and system analysis & design (American University in Cairo).1986▶ Training course in artificial Intelligence (Egyptian Engineers Syndicate).1993▶ ORACLE database training.1995▶ Workshop in design of buildings using the UBC and ACI codes, Duabi, Jabal Ali Free Zone Authority (JAFZA). 2006▶ Course, Project Management Professional (PMP), 2018▶ Attending many structural engineering events, conferences and seminars | |
| Skills | <ul style="list-style-type: none">▶ Using general Purpose Applications (Word, Excel, PowerPoint, Photoshop)▶ Programming and Developing Applications using MS Access, Visual Basis, C#.net, Fortran and Python▶ Wide background about Artificial Intelligence Tools and Applications (Especially Genetic Algorithm).▶ Using the Structural Analysis and Drafting Programs SAP 2000 – ETABS – SAFE – RAM – AutoCAD - Revit▶ Perform planning and scheduling using the CPM method.▶ Structural design including full modeling, design, and detailing according to the UBC-IBC-ACI-ASCE-B.S. codes of practice, | |

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| <p>Job History</p> <p>Oct 1985: Now Sep. 2019: Now</p> <p>Feb 2013: Jan 2017</p> <p>Sep 2006: Sep 2009 Feb 2006: Sep 2006</p> <p>Mar 2005: Dec 2005</p> <p>Sep 1997: Mar 2005</p> <p>May 1994: Sep 1995</p> | <p>Demonstrator : Professor, Zagazig University, Egypt.</p> <p>Structural Design Consultant, Talaat Mostafa Group (TMG), Madinaty, Egypt.</p> <p>Head of Str. Design Dept., AJDAN Real Estate Development., KSA.</p> <p>Senior Structural Eng., Bel-Yoahah Eng. Consultants, Dubai.</p> <p>Coordinator, Modern Executive Systems Contracting, Dubai,</p> <p>Head of Structure dept., DIMENSIONS Eng. Consultants, Dubai.</p> <p>TMG Technical support for Structural Design of "AL REHAB" City, Egypt.</p> <p>Lecturer and construction management system developer, Egyptian National Company for Construction and Development.</p> |
| <p>EXPERIENCE</p> <p>Design & Design Management</p> | <p>3B + G+3 Capital Care, Eye of the World, New Capital, Egypt, 2021. Architect/ Consultant: Water Engineering & Environmental Consultations. Role: Design management and revision</p> <ul style="list-style-type: none"> ▪ Full structural modeling, design, detailing and coordination, Authority discussions and approval <p>B + G+2 SIS, BCCIS international schools (20,000 m² land area), Owest, Sixth October City (Cairo for Investment & Real Estate Development. CIRA), Egypt, 2021. Architect/ Consultant: Signature Engineering Consultant. Role: Design management, leading, and Revision Full structural modeling, design, detailing and coordination, Authority discussions</p> <p>UG-Tank + G +2P + 8 Typ. + Roof + Pool + T. Roof, MERAAS ESTATES Building, Dubai, 2018. Architect/ Consultant: Archdome Engineering consultants. Role: Senior structural Engineer, Archdome Engineering consultants</p> <ul style="list-style-type: none"> ▪ Full structural modeling, design, detailing and coordination ▪ Municipality submission, discussion and approval <p>AJDAN walk (Luxury B+ G+ one retail village) located in AL-Khobar, KSA, 2016. Architect/ Consultant: Benoy International, London - Mott-McDonalds, Bahrain. Role: Developer Head of structure department</p> <ul style="list-style-type: none"> ▪ Evaluation of Consultant Proposals, ▪ Follow up, discussions and design progress ▪ design review of the structural design and leading Value Engineering sessions <p>AJDAN Rise (B + G + 3P + 6 Mid-Rise + 27 Typical) AL-Khobar, KSA, 2015. Consultant: NORR international, Dubai Role: Developer Head of structure department</p> <ul style="list-style-type: none"> ▪ Evaluation of Consultant Proposals, ▪ Follow up, discussions and design progress ▪ design review of the structural design and leading Value Engineering sessions <p>AJDAN Water Front Project composing of two towers (2B+5Podium+6 towers 26 Floor each) AL-Khobar, KSA, 2013 (Proposal) Architect: Arabian Architects Role: Developer Head of structure department (in house structural design)</p> <ul style="list-style-type: none"> ▪ full modeling of the complex ▪ Design of pile foundation of Phase I. ▪ Tender document issuing as fast track phase ▪ Tender evaluation, negotiation and selection of contractor (HSSG) |

Military Housing Project, Najran, KSA. 2012

Owner: General Directorate of Military Works, Kingdom of Saudi Arabia

Role: Contractor-assigned consultant

- Revision of structural design
- Value Engineering and design changes proposal.

Design, Revision and evaluation of Saudi Arabia RC Bridges 2011-2012

Consultant: Badr Consulting and Retrofitting

Contractor: **Al-Ayuni** Company, Kingdom of Saudi Arabia

Role: Third Party Consultant

- Assessment, Checking and Redesign of Bridge No. 05 at Station 53-084.471 Project
- Dualization of Al-Baha Mikhawa-Mudalief Road
- Inspection of Wadi Laya Bridge, Group No.05 Road No.2 Al Gulf Road including the analysis, Assessment and Checking the design.

Al Emarah 60-Story building, Ajman, UAE, 2011.

Consultant: AAYAN Engineering, UAE

Role: Third Party Consultant

- Development of full structural model
- Upgrading of the existing raft on piles
- Redesign of structural elements

Nasamat AL-Ryadh Project, Kingdom of Saudi Arabia, 2010

Owner: **TMG** Group

Role: Third Party Consultant

- Value Engineering, checking and redesign of Apartment and Villa buildings

Several projects in Dubai, 2006-2009 among them:

- **B+G+16+R, 150 Million UAD.** ATLANTIS Management Accommodation Building at Jumairah Village for ISTITHMAR.
- **B+G+16+R, 200 Million UAD.** ATLANTIS Staff Accommodation Building at Jumairah Village for ISTITHMAR.
- **2B+G+20 stories 500 Million UAD.** Hotel and office Buildings for Dubai Customs at Port Rashed, Dubai.
- **B+G+3P+19+R al BAREEQ** building at Dubai business bay

Consultant: Bel-Yohah Engineering Consultants, UAE

Role: Senior Structural Engineer

- Full Design including modelling, analysis, design and detailing
- Authority submission and discussions up to permit
- Other disciplines design and site coordination

B+G+24 Stories, Al-Rashdan Tower, Dubai Marina, 2006

Consultant: KEO international

Role: Contractor Tech. office coordinator

- Coordination of architectural-MEP-Structural works
- Shop drawing and Technical office support

Several projects in Dubai and Sharjah, 2005 among them:

- 43 stories building, SHARJAH
- The Sheikh Zayed Twin Tower MUT (2B+G+1Mezz+51+4Mech) Dubai.
- The Palm Resort at Al Fujairah
- 33 stories Al Remethy building, Sharjah UAE
- The T1 Jumairah Lake Towers project (4B+G+34+1Mech+Roof) Dubai

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| | <p>Consultant: Dimensions Engineering Consultants, UAE Role: Head of Structural Department</p> <ul style="list-style-type: none"> ▪ Full design and coordination ▪ Authority submission, discussions and permit . <p>Rehabilitation of the 12 story Nile Hotel 2004-2005 Owner: TMG Group Role: Contractor technical support</p> <ul style="list-style-type: none"> ▪ Technical support member in the project of including the repair works of various types ▪ Rising the building and adding swimming Pool above (2004-2005). ▪ Works includes the addition of micro-piles in the foundations, demolition of old parts, performing concrete and Fiber Carbon Jackets, and construction of steel hall building <p>AL REHAB City, New Cairo, Egypt, 1997-2005 Owner: TMG Group Role: Contractor technical support</p> <ul style="list-style-type: none"> ▪ Revision of design and value engineering ▪ Redesign of some building types ▪ Repair of the anticipated problems arising during construction and Design of site erections. |
| <p>Management & IT developments</p> | <ul style="list-style-type: none"> ▪ issuing of RFPs and evaluation of proposals related to consultants, vendors, and contractors, 2015-2016. ▪ Release of Tender Documents, carrying out tender evaluation and negotiation with specialists, 2015:2016 ▪ Development of Information system for the control of construction subcontractor payment and progress and the estimation of client invoice (Al Rehab Project). (in Visual Basic & Microsoft ACCESS) 1998-2003 ▪ Employed as Lecturer and system developer in the Field of Construction Management and Cost Control for the National Company for Construction and Development. During this period developed a computer system called Site Management Information System “SMIS” used in Construction site management and cost control. 1994-1995 |
| <p>Engineering & IT Education</p> | <p>Teaching several Structural Engineering courses including(1985:2017)</p> <ul style="list-style-type: none"> • Structural Analysis 1991-2019 • Foundation Engineering 1988-1991 • Structural Dynamics 2000-2009 • Earthquake Engineering 2009-2013 • Computer aided Structural analysis and design 1999-2019 <p>Supervising the B.Sc. Project (Computer Aided Structural Analysis and Design) for several years including lectures on high rise buildings and the revision of all project activities. 1997:2017 Lecturer, Faculty of Technology at Abha - Saudi Arabia. February 2001 - June 2001. Based on Credit Hours. Supervising over 12 master and doctor thesis (Refer to supervision List) Publishing as many as 30 Technical Papers in local and international Journals and conferences (refer to publication List) <i>Developing and teaching the following computer courses for Private Institutions</i></p> <ul style="list-style-type: none"> • AutoCAD 1989-1994 • STAAD program 1988-1991 |

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| Resume | Tharwat Ali Sakr, Ph.D. |
| | <ul style="list-style-type: none"> • Management Information Systems 1999-2001 • SAP80, SAP90, SAP2000 1993-2005 • BASIC Languages 1988-1995 • Data Base (dBASE, FOX Pro, MS ACCESS) 1988-2005 • Visual Basic 1999-2005 • FORTRAN language 1988-2001 |
| List of PUBLICATIONS | <ul style="list-style-type: none"> ▶ Shallan, O., <i>Sakr, T.</i>, Khater, M., Ismail, A., Proposed Design Criteria for column strengthened using steel angles and strips, <i>Frattura ed Integrità Strutturale</i>, 60(2022) 1-12. ▶ Osman Shallan, <i>Tharwat Sakr</i>, Mahmoud Khater and Ahmed Ismail, Modeling of slender RC columns strengthened by steel angles and strips, <i>Computers and Concrete</i>, Vol. 28, No. 4 (2021) 361-367 https://doi.org/10.12989/cac.2021.28.4.361 ▶ H. E. Abd-El- Mottaleb, <i>T. A. Sakr</i>, Multiple Connected Pendulum TMD (MCPTMD) For Vibration Control of Structures, <i>INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 10, ISSUE 05, MAY 2021</i>, URL: https://www.ijstr.org/final-print/may2021/Multiple-Connected-Pendulum-Tmd-mcptmd-For-Vibration-Control-Of-Structures.pdf ▶ Mohamed Shallan; Hanaa Abd El-Mottaleb; <i>Tharwat Sakr</i>; Ragab Shaker4, Response of Post-Tensioned Two Way Flat Slabs to Vibration, <i>Egyptian Journal for Engineering Sciences and Technology</i>, Vol 33, 2021, URL: https://eijest.journals.ekb.eg/ ▶ M.Shallan, <i>T. Sakr</i>, R. Shaker, H. Abd-El- Mottaleb, Effect Of Openings On Post-Tensioned Flat Slab, <i>INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 11, NOVEMBER, ISSN 2277 -8616, 2020</i>, URL: https://www.ijstr.org/final-print/nov2020/Effect-Of-Openings-On-Post-tensioned-Flat-Slab.pdf ▶ Atef Eraky , <i>Tharwat A. Sakr</i> , and Riham Khalifa, Mitigation of progressive collapse of buildings resulting from accidental explosions, <i>International Journal of Scientific & Engineering Research</i>, Volume 8, Issue 3, March-2017 976 ISSN 2229-5518, https://www.ijser.org/researchpaper/Mitigation-of-progressive-collapse-of-buildings-resulting-from-accidental-explosions.pdf ▶ <i>Tharwat Sakr</i>, Atef Eraky, Jala Esmat , Progressive Collapse Analysis of Multi-Story Space Frames, <i>International Journal of Scientific & Engineering Research</i>, Volume 8, Issue 2, Feb. 2017 ISSN 2229-5518, https://www.ijser.org/researchpaper/Progressive-Collapse-Analysis-of-Multi-Story-Space-Frames.pdf ▶ Osman Shallan, Atef Eraky, <i>Tharwat Sakr</i>, Mohamed Khozam. Structural Damage Detection using Genetic Algorithm by Static Measurements. <i>International Journal of Trend in Research and Development (IJTRD)</i>, ISSN: 2394-9333, Volume-4 Issue-1, February 2017, http://www.ijtrd.com/papers/IJTRD6601.pdf ▶ <i>Tharwat .A. Sakr</i>. DEVELOPMENTS IN SUPER TALL BUILDINGS. <i>Review Article</i>, 2015. ▶ <i>Tharwat .A. Sakr</i>. Progressive Collapse Analysis of Reinforced Concrete Buildings Including Soil-Structure-Interaction. <i>International Journal of Civil and Structural Engineering Research</i> ISSN 2348-7607, 3(2), May-2015. |

- ▶ **Tharwat .A. Sakr.** Vibration Control of Buildings by Using Partial Floor Loads as Multiple Tuned Mass Dampers. *HBRC Journal* (2015),
<https://www.sciencedirect.com/science/article/pii/S1687404815000334>
- ▶ Gouda A. Mohamed, **T. A. Sakr**, Ghada N. Mohamed. Post Tensioned Floors As An Economic Alternative In The Egyptian Market. *The Egyptian International Journal of Engineering Sciences and Technology - Vol.17 - No.1, January 2014.*
- ▶ Osman Shallan, Atef Eraky, **Tharwat Sakr**, Shaimaa Emad. Response of Building Structures to Blast Effects. *Intl. J. of Engg. and Innovative Technology (IJEIT), Volume 4, Issue 2, Aug. 2014*
- ▶ **T.A. Sakr** and Hanaa E. Abd-El- Mottaleb. Parameters Affecting The Elasto-Plastic Behavior Of Outrigger Braced Walls To Earthquakes. *WASET I.J. of Civil, Structural, Construction and Architectural Engineering Vol:8, No:7, ICEGSE 2014, International Conference on Earthquake, Geological and Structural Engineering, London, 2014.*
- ▶ Osman Shallan, Atef Eraky, **Tharwat Sakr**, Abdalla Salama. Optimum Design of Space Tensegrity Dome. *International Journal of Engineering and Innovative Technology (IJEIT) Volume 3, Issue 9, March 2014,*
www.ijeit.com/Vol%203/Issue%209/IJEIT1412201403_08.pdf
- ▶ Shallan O, **SakrT.A**, Eraky A., Hamdy, O. Optimization of Plane and Space Trusses Using Genetic Algorithms. *International Journal of Engineering and Innovative Technology (IJEIT), Volume 3, Issue 7, Jan. 2014,*
- ▶ **Tharwat A. Sakr**, Atef Eraky, Osman Shallan and Sajad Kareem. Seismic Vulnerability of Buildings through Robust Database of Earthquakes and Buildings. *J American Science 2013;9(7):378-385]. (ISSN: 1545-1003).*
http://www.jofamericanscience.org/journals/am-sci/am0907/046_18561am0907_378_385.pdf
- ▶ **T.A. Sakr**, H.E. Abd-El- Mottaleb. Elasto-Plastic Behavior of Outrigger Braced Walls. *J American Science;8(12):1230-1238]. (ISSN:1545-1003,) 2012*
- ▶ **Sakr, T.A.** Response Of TMD Controlled Framed Buildings To Blast Effect. *The Egyptian International Journal of Engineering Sciences and Technology - Vol.13 - No.1, January 2010.*
- ▶ **Sakr, T.A.** The Application of Genetic Algorithm To The Optimization Of Outrigger Braced High Rise Buildings. *Ain Shams Journal of Civil Engineering (ASJCE), Vol. 1.No. 1 ISSN: 1687-8590, March, 2009.*
- ▶ Abdel Salam S. S., Shallan O. E., **Sakr T. A.**, Fathy E. Methods To Mitigate Pounding. *Future Sustainable Skycities and Towers in the Present Millennium, The 7th International Conference on Multi-Purpose High Rise Towers and Tall Buildings, Dubai, Dec.2005.*
- ▶ Abd-Elsalam S, Shalaan O., **Sakr T.A.**, ElSayed, H. Nonlinear Seismic Analysis of Coupled Shear Walls-Soil Interaction. *Future Sustainable Sky-cities and Towers in the Present Millennium, The 7th International Conference on Multi-Purpose High Rise Towers and Tall Buildings, Dubai, Dec.2005.*
- ▶ Abdel Salam S. S., Shallan O. E., **Sakr T. A.**, Fathy E. Pounding influence on adjacent buildings with different dynamic properties. *Proceeding of The Eleventh International Colloquium on Structural and Geotechnical Engineering, Ain Shams University, Cairo, Egypt, May, 2005*
- ▶ **Tharwat .A. Sakr.** GENETIC ALGORITHM APPLICATION IN STRUCTURAL ENGINEERING. *Review Article, 2004.*

- ▶ *Sakr, T.A.* Modeling of Steel Reinforcement in Nonlinear Static and Dynamic Finite Elements. *AUEG, al Azhar University Engineering Journal, Vol. 3, October 2004.*
- ▶ Abd-Elsalam S, Shalaan O. *Sakr T.A.*, ElSayed, H. Behavior of Reinforced Concrete Coupled Shear Walls Under Seismic Excitation. *Ninth Arab Structural Engineering Conference (9ASEC), Abu Dhabi, 2003.*
- ▶ Al-Tuhami A.A. and *Sakr, T.A.* Retrofit of Reinforced Concrete Columns Using Global Lateral External Pressure. *Composites in Construction International Conference (CCC), University of Calabria, Italy, 16-19 September 2003.*
- ▶ El-Shamy E. *Sakr, T.A.* Non Linear Behavior of Stepped Shear Walls. *Second Internationals Specialty Conference on the conceptual approach to structural design. Milan, Italy, 2003.*
- ▶ Abd-Elsalam, S, Shalaan O, *Sakr, T.A.*, ElSayed. H. Earthquake Nonlinear Material Analysis Simulation of Reinforced Concrete Coupled Sheer Walls. *Fourth International Conference on Civil and Architecture Engineering, Military Technical College, Cairo, 2002.*
- ▶ *Sakr T.A.*, Sabry A. Ahmed. Seismic Analysis of Buildings with Soft Story”, *Fourth Alexandria International Conference on Structural and Geotechnical Engineering, Alexandria, 2001.*
- ▶ Al-Tuhami A.A. and *Sakr T.A.* An Innovative Technique for Strengthening Reinforced Concrete Columns Using Mechanical Confining”, *Eight Arabic Conference of Structural Engineering, Cairo, 2000.*
- ▶ Sayed Abd-Elsalam, Sadek A.W., Hany O. Soliman and *Sakr T.A.* Appraisal of Seismic Resistance of Existing Irregular Buildings using Strength and Drift Criteria in the Egyptian Code. *Eight Arabic Conference of Structural Engineering, Cairo, 2000.*
- ▶ Al Thuhami A.A and *Sakr T.A.* Suggested Technique for Strengthening Reinforced Concrete Columns Subjected to Dynamic Loads”, *Arabic Conference for Repair and Rehabilitation of Structures, Cairo, Egypt, 1998.*
- ▶ Sadek A.W., El Shihy, A.M. and *Sakr T.A.* Continuous Analysis of Non Collinear Coupled Shear Walls. *Engineering Research Journal, University of Helwan, Vol.2, P.286-299, Egypt, 1995.*
- ▶ Sadek A.W., El Shihy A.M. and *Sakr T.A.* Lateral Load Analysis of Non Collinear Coupled Shear Walls. *Fourth Arab Structural Engineering Conference, Cairo, Egypt, 1991.*

THESIS SUPERVISION

- ▶ *Ahmed Ismail.*, Strengthening of reinforced Concrete long Columns, *Ph.D, Ongoing*
- ▶ *Azza Mahmoud.*, Hybrid Strengthening of reinforced Concrete beams with external post tensioning and FRP, *Ph.D, Ongoing*
- ▶ *Mohamed Shaalan.*, EFFECT OF OPENING IN THE BEHAVIOR OF POST-TENSION FLAT SLAB, *M.Sc, 2021*
- ▶ *Marwah Ahmed.*, Safety of Buildings against Progressive collapse due to abnormal loads, *M.Sc, 2017*
- ▶ *Mohamed Khozam.* Genetic Algorithm and Neural Networks application to Damage Detection of Structures, *M.Sc, 2017*
- ▶ *Jala Esmat.* Sensitivity of building collapse to design methods and structural systems, *M.Sc, 2017*
- ▶ Othman Hamdy, Optimization of Space Trusses Using Genetic Algorithm, *M.Sc.,2015*
- ▶ *Ghada Nashaat.* Analysis of the post tension floors for optimum behavior and economic design, *M.Sc.,2015*

- ▶ *Abdallah Salamah*, Optimum Design of Space Tensegrity Structures, *M.Sc, 2014*
- ▶ *Shaimaa Emad*, Risk Mitigation Of Building Against Blast Loads, *M.Sc, 2014*
- ▶ *Sajad Kareem*, Characterization of Seismic Risk of Structures through Robust Database Framework, *M.Sc, 2013*
- ▶ *Hanaa El-Sayed*, Earthquake Nonlinear Modeling of R.C Buildings Including Foundation Soil Interaction, *Ph.D., 2005.*
- ▶ *Ebtsam Fathy*, Seismic Pounding between Adjacent Buildings with different Dynamic Properties, *M.Sc, 2005*
- ▶ *Hanaa El-Sayed*, Nonlinear Dynamic Analysis of Coupled shear Walls, *M.Sc, 2002*

**INTERNET
COURSES**

- ▶ Lectures in Building design using ETABS and SAFE, Post Tension Design USING RAM , and earthquake engineering
<https://www.youtube.com/user/tharwatsakr>